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EXAMINER

KLIMACH, PAULA W

ART UNIT	PAPER NUMBER
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2135

MAIL DATE	DELIVERY MODE
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01/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/073,772

Applicant(s)

HAITSMA ET AL.

Examiner

Paula W. Klimach

Art Unit

2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-25 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 10/26/07.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Art Unit: 2135

DETAILED ACTION***Response to Amendment***

This office action is in response to amendment filed on 10/26/07. The amendment filed on 10/26/07 have been entered and made of record.

Response to Amendment

The amendment to the claims filed on 10/26/07 does not comply with the requirements of 37 CFR 1.121(c) because claim text markings are required, the current claim markings are not an accurate depiction of the condition of the claims in reference to the previous state of the claims. An example of a discrepancy is claim 1 that is the equivalent of claim 18. Claim 1 appears to be a new claim in comparison to its corresponding claim 18. In addition a claim which was previously canceled may be reinstated only by adding the claim as a "new" claim with a new claim number. The claims 2-25 appear to be older claims 2-25 of a previous response (02/11/02) wherein corresponding claims 2, 11-17, and 21-25 of previous response (10/25/07) were cancelled. Amendments to the claims filed on or after July 30, 2003 must comply with 37 CFR 1.121(c) which states:

(c) *Claims*. Amendments to a claim must be made by rewriting the entire claim with all changes (e.g., additions and deletions) as indicated in this subsection, except when the claim is being canceled. Each amendment document that includes a change to an existing claim, cancellation of an existing claim or addition of a new claim, must include a complete listing of all claims ever presented, including the text of all pending and withdrawn claims, in the application. The claim listing, including the text of the claims, in the amendment document will serve to replace all prior versions of the claims, in the application. In the claim listing, the status of every claim must be indicated after its claim number by using one of the following identifiers in a parenthetical expression: (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

(1) *Claim listing.* All of the claims presented in a claim listing shall be presented in ascending numerical order. Consecutive claims having the same status of “canceled” or “not entered” may be aggregated into one statement (e.g., Claims 1–5 (canceled)). The claim listing shall commence on a separate sheet of the amendment document and the sheet(s) that contain the text of any part of the claims shall not contain any other part of the amendment.

(2) *When claim text with markings is required.* All claims being currently amended in an amendment paper shall be presented in the claim listing, indicate a status of “currently amended,” and be submitted with markings to indicate the changes that have been made relative to the immediate prior version of the claims. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. Only claims having the status of “currently amended,” or “withdrawn” if also being amended, shall include markings. If a withdrawn claim is currently amended, its status in the claim listing may be identified as “withdrawn—currently amended.”

(3) *When claim text in clean version is required.* The text of all pending claims not being currently amended shall be presented in the claim listing in clean version, i.e., without any markings in the presentation of text. The presentation of a clean version of any claim having the status of “original,” “withdrawn” or “previously presented” will constitute an assertion that it has not been changed relative to the immediate prior version, except to omit markings that may have been present in the immediate prior version of the claims of the status of “withdrawn” or “previously presented.” Any claim added by amendment must be indicated with the status of “new” and presented in clean version, i.e., without any underlining.

(4) *When claim text shall not be presented; canceling a claim.*

(i) No claim text shall be presented for any claim in the claim listing with the status of “canceled” or “not entered.”

(ii) Cancellation of a claim shall be effected by an instruction to cancel a particular claim number. Identifying the status of a claim in the claim listing as “canceled” will constitute an instruction to cancel the claim.

(5) *Reinstatement of previously canceled claim.* A claim which was previously canceled may be reinstated only by adding the claim as a “new” claim with a new claim number.

The applicant argued that Schneider’s teaching of dividing an image into a plurality of blocks is different from first dividing the information signal into frames and then dividing each frame of the information signal into disjoint bands or blocks. This is not found persuasive. In section 6.0 (Authentication of Video) Shneider teaches that the still authentication technique can be applied to each frame of the video sequence. This means that the frame is corresponds to the

Art Unit: 2135

image. As a result, Shneider does teach the division of the video into frames, images, and the images are divided into blocks.

The applicant Schneider does not teach comparing the value of the extracted feature with a threshold. This is not found persuasive. As disclosed by the applicant, Schneider teaches the comparing the distance between the feature vectors is less than a certain threshold. That is the distance between the feature, corresponds to the extracted feature, compared to the threshold.

Futhermore the applicant argues that Schneider doest not mention generating for each block a hash bit indicating whether the value of the extracted feature is larger or smaller than said threshold. This is not found persuasive. The method of comparing as disclosed in Fig. 3 indicates whether the value of the extracted feature is larger or smaller, hence comparing.

The applicant argues that Schneider does not disclose reliable hash bits for which the extracted feature differs substantially from said threshold, and unreliable bits for which the extracted feature does not differ substantially from said threshold. The applicant does not define substantially and as a result any difference as disclosed in the Fig. 3 is substantial.

Furthermore, the applicant argues that Boles fails to teach deriving any hash signal. The applicant argues further Boles teaches forming signature for every frame of a real time transmission. As part of the signature generation, a hash is calculated and as a result the hash signal is derived.

Claim Rejections - 35 USC § 112

Regarding claim 20, the phrase "sufficiently small" renders the claim(s) indefinite because the one skilled in the art could not determine specific values for the amount based on the disclosure. See MPEP § 2173.05(c).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by the article by Schneider ("A Robust Content Based Digital Signature for Image Authentication").

In reference of claim 1 and 13 A method of generating a hash signal to identify content in an information signal, the method comprising: dividing the information signal into frames (Fig. 8) computing a hash word for each frame (Fig. 8); and concatenating successive hash words for each frame (section 6.0 column 2 lines 1-9) includes: dividing each frame of the information signal into disjoint bands or blocks, and calculating a property of the signal in each of said bands or blocks (section 5.0 page 229 column 1 paragraph 3).

In reference to claim 12 Schneider discloses a system to authenticate images presented wherein dividing the information signal into blocks (Fig. 8); extracting for each block a feature of the information signal within said block (Fig. 2); comparing the value of the extracted feature with a threshold (Fig. 3); generating for each block a hash bit indicating whether the value of the

Art Unit: 2135

extracted feature is larger or smaller than said threshold (fig. 3); determining for each block reliability information indicating whether the value of the extracted feature differs substantially from said threshold (section 6.0 lines 1-6 column 1); combining said hash bits and said reliability information of the blocks into a hash value having reliable hash bits for which the extracted feature differs substantially from said threshold, and unreliable bits for which the extracted feature does not differ substantially from said threshold (Fig. 8 second level hash).

In reference to claim 2 wherein said computing comprises comparing the properties in the bands or blocks with respective thresholds (page 228 section 5.0 column 2); and representing the results of said comparisons by respective bits of the hash word (section 5.0 column 2).

In reference to claim 9 wherein said information signal is divided into overlapping frames (Fig. 8).

In reference to claim 10, wherein the information signal is a video signal, the frames of which are divided into blocks, the mean luminance of a block constituting the property of said block (Fig. 8 and section 5.0).

In reference to claim 11, further comprising the step of using the inputs of said comparing steps to generate information, which is indicative of the reliability of the bits of the hash word (Fig. 8 second level hash).

Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Boles et al (5,019,899).

In reference to claim 24 Boles discloses a system for receiving and/or recording at least a part of said multimedia signal (Fig. 1 part 40), deriving a hash signal from said multimedia

Art Unit: 2135

signal, sending said hash signal to a database for matching it with has signals stored in said database (column 4 lines 21-35), and receiving from said database an identifier of the multimedia signal (column 4 lines 36-43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider as applied to claim 1 and further in view of ISO/IEC specification.

In reference to claim 3 wherein the property of a corresponding band or block in a previous frame constitutes said threshold.

Schneider does not expressly disclose the property of a corresponding band or block in a previous frame constitutes said threshold.

However the specification of the ISO discloses comparing a frame from a previously decoded frame (7.6.1).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to compare a block to a threshold as in the specification of the ISO in the system of Schneider. One of ordinary skill in the art would have been motivated to do this because this will help determine the motion compensation.

Art Unit: 2135

In reference to claim 4 wherein the property of a neighboring band or block in a previous frame constitutes said threshold.

Schneider does not expressly disclose the property of a neighboring band or block in a previous frame constitutes said threshold.

However the specification of the ISO discloses comparing a frame from a previously decoded frame (7.6.1).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to compare a block to a threshold as in the specification of the ISO in the system of Schneider. One of ordinary skill in the art would have been motivated to do this because this will help determine the motion compensation.

In reference to claims 5-8, wherein the bands or blocks are frequency bands of the frequency spectrum of the respective frame of the information signal.

Schneider discloses comparing the hash values and contains the intensity information for the histogram.

Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to compare the frequency spectrum of the respective frame. One of ordinary skill in the art would have been motivated to do this because this would show the difference in the content of the frames.

Claims 14-20, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider in view of Boles (US 5,019,899)

Art Unit: 2135

In reference to claims 14 and 21 Schneider discloses a system to authenticate images presented a method performed by this system includes calculating a difference between the Input block of hash words and a stored block of hash words in which the hash word found in step has the same position as the selected hash word in the input block (page 228 section 5.0 column 2 lines 6-21); repeating the selecting, searching and calculating for a further selected hash word until said difference is lower than a predetermined threshold (Fig. 8).

Schneider does not expressly disclose selecting a hash word of said input block of hash words; searching said hash word in the database.

Boles system for creating digital signatures form frames of selected video segments and storing them in databases (abstract). The system includes the steps of selecting a hash word of said input block of hash words (column 4 lines 34-35); searching said hash word in the database to obtain a found hash word (column 4 lines 36-43). The signature is the equivalent of the hash as disclosed by the applicant in the applicant admitted prior art.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to keep the hash values in a database to search for the hash as in. One of ordinary skill in the art would have been motivated to do this because a database is a method of organizing and sorting and searching information in a orderly fashion.

In reference to claim 15 wherein the further selected hash word is another hash word of the input block of hash words (Fig. 8).

In reference to claim 16, wherein the further selected hash word is obtained by reversing a bit of the previously selected hash word (Fig. 3).

Art Unit: 2135

In reference to claim 17 further comprising the steps of receiving information which is indicative of the reliability of the bits of the selected hash word, and using said information to determine the bit to be reversed (Fig. 8 second level hash).

In reference to claims 18-19, Schneider discloses a system to authenticate images presented a method performed by this system includes receiving said hash value in the form of a plurality of reliable hash bits and unreliable hash bits (Fig. 3); and determining for which stored hash values the bit error rate is minimal and sufficiently small (Fig. 3).

Schneider does not expressly disclose searching in the database the stored hash values for which holds that the reliable bits of the applied hash value match the corresponding bits of the stored hash value.

Boles system for creating digital signatures form frames of selected video segments and storing them in databases (abstract). The system includes the steps of searching in the database the stored hash values for which holds that the reliable bits of the applied hash value match the corresponding bits of the stored hash value (column 4 lines 34-43). The signature is the equivalent of the hash as disclosed by the applicant in the applicant admitted prior art.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to keep the hash values in a database to search for the hash as in. One of ordinary skill in the art would have been motivated to do this because a database is a method of organizing and storing and searching information in an orderly fashion.

In reference to claim 20 Schneider teaches further repeating the applying, searching, selecting, calculating and determining for other hash values of the unidentified information

Art Unit: 2135

signal until a series of stored hash values is found for which the Bit error rate is minimal and sufficiently small (Fig. 8).

In reference to claim 23 Schneider teaches calculating the difference between the derived hash signal and the stored hash signal (Fig. 8). Schneider also discloses deriving a hash signal from said information signal (Fig. 8).

However Schneider does not expressly disclose matching said hash signal with a hash signal identifying said information signal stored in a database.

Boles discloses matching said hash signal with a hash signal identifying said information signal stored in a database (column 4 lines 36-43).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to keep the hash values in a database to search for the hash as in. One of ordinary skill in the art would have been motivated to do this because a database is a method of organizing and storing and searching information in an orderly fashion.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boles in view of Eichstaedt et al (6,654,735 B1)

In reference to claim 22 Boles discloses deriving a hash signal from said information signal (column 4 lines 21-35), and matching said hash signal with hash signals identifying stored in a database (column 4 lines 36-43).

Although Boles discloses the matching of a hash signal with hash signals identifying stored video in a database, Boles does not disclose websites stored in a database.

Art Unit: 2135

Eichstaedt discloses a system for automatically generating user interest profiles and delivering information to users (abstract). The system discloses storing web pages in a database (column 2 lines 16-18). Web pages are address for a resource on the internet.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to store Internet websites in a database as in Eichstaedt in the system of Boles. One of ordinary skill in the art would have been motivated to do this because databases are convenient and ordered methods of storing information.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boles.

In reference to claim 25, wherein said steps of receiving and/or recording the multimedia signal, deriving and sending the hash signal, and receiving the identifier are performed by a mobile telephone device.

Although Boles does not disclose receiving the identifier are performed by a mobile telephone device, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use mobile telephone device. One of ordinary skill in the art would have been motivated to do this because the system of Boles discloses the use of processors and mobile telephones are processor devices.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paula W. Klimach whose telephone number is (571) 272-3854. The examiner can normally be reached on Mon to Thr 9:30 a.m to 5:30 p.m.

Art Unit: 2135

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PWK

Friday, January 04, 2008



THANHNGA TRUONG
PRIMARY EXAMINER